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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/769,112	01/25/2001	Ioannis G. Stylianou	Stylianou 2000-0059	4672
7590 03/25/2004				
Henry T. Brendzel P.O. Box 574 Springfield, NJ 07081				
			EXAMINER JACKSON, JAKIEDA R	
			ART UNIT 2655	PAPER NUMBER 3
DATE MAILED: 03/25/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/769,112	Applicant(s) STYLIANOU ET AL.	
	Examiner Jakieda R Jackson	Art Unit 2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 is/are allowed.
- 6) ☒ Claim(s) 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 18-19** are rejected under 35 U.S.C. 102(e) as being anticipated by Unno et al. (U.S. Patent No. 6,453,287), hereinafter referenced as Unno.

Regarding **claim 18**, Unno discloses a method for communicating information from a transmitter to a receiver comprising the steps of, in the transmitter:

receiving a speech signal (column 1, lines 13-19 and claim 4);

subdividing said speech signal into phoneme-related segments (figure 12 and plosive phonemes; column 2, lines 31-49 and plosive modeling; column 8, lines 7-46);

subdividing each of said segments into a plurality of speech frames (claim 1 and column 8, lines 23-26);

analyzing each frame of said speech frames (analysis of frequency spectrums)  
identify at least fundamental frequency of speech in said frame (identified plosive

sounds), and energy in said frame (energy of the plosive signal; column 7, line 57 – column 8, line 17); and

transmitting said information (transmit plosive signal; column 3, lines 17-21) that specifies said fundamental frequency (column 2, lines 25-30) and said energy (column 8, lines 7-9), and

at least for some of said speech frames, those being selected speech frames, transmitting information about super-class identities of the phoneme-related segments from which said selected speech frames are subdivided (plosive phonemes; column 2, lines 31-49) and plosive modeling; column 8, lines 7-46).

Regarding **claim 19**, Unno discloses the method where said selected speech frames are the first speech frames (plosive position is first half of current frame) of each of said phoneme-related segments (plosive modeling; column 8, lines 7-33).

### ***Allowable Subject Matter***

3. **Claims 1-17** are allowed.

The following is a statement of reasons for allowance:

As for independent claims 1, 9 and 13, they recite a method for generating a speech signal receiving super-class information, fundamental frequency information and generating a speech spectrum. Prior art such as Unno et al. show these methods but fails to teach the recited method wherein super-class information (e.g. phoneme

type)/fundamental frequency tuples are linked with LSF vectors, to obtain a LSF vector correlated with each of the tuples, for speech synthesis.

Dependent claims 2-8, 10-12 and 13-17 are allowed because they further limit their parent claims.

4. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 20 also applies fundamental frequency information and associated super-class information to a module that correlates fundamental frequencies with LSF vectors for different super-classes, to obtain a desired LSF vector of coefficients associated with each tuple.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Luginbuhl (U.S. Patent No. 5,473,728) teaches the training of homoscedastic hidden markov models for automatic speech recognition.
- Suzuki et al. (U.S. Patent No. 6,470,312) discloses a speech coding apparatus, speech processing apparatus, and speech processing method.
- Gerson et al. (U.S. Patent No. 5,675,702) discloses a multi-segment vector quantizer for a speech coder suitable for use in a radiotelephone.

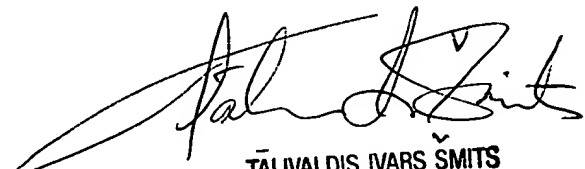
- Sharmon (U.S. Patent NO. 5,970,453) discloses a method and system for synthesizing speech.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 703.305.5593. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis I. Smits can be reached on 703. 306-3011. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRJ  
March 12, 2004



TĀLIVALDIS IVARS ŠMITS  
PRIMARY EXAMINER